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Final Technical Report NASA Grant NAG 5-1693 QQ Vul: The Longest Period AM Her System

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This report describes the activities at Penn State University supported by NASA Grant NAG5-1693, "QQ Vul: The Longest Period AM Her System". This final report covers the entire grant period, from initiation, July 15, 1991, to the planned conclusion, July 15, 1992, through the no-cost extension date, July 15, 1993.

The purpose of this grant was to support the data analysis of my approved ROSAT Guest Investigator program to observe QQ Vul, a cataclysmic variable of the AM Herculis type. In addition to this analysis this grant received an educational supplement from NASA Headquarters under the direction of Dr. Jeff Bennett.

The observations of QQ Vul were conducted in October, 1990, but despite this early collection of data trouble with the SASS software which performs the pipeline data reduction prevented my receiving any useful until more than one year later.

Since then I have involved a graduate student in working with my ROSAT data, Mr. Chris Baluta. Mr. Baluta is in his first year of graduate school so is only available, due to teaching and course requirements, during academic holiday periods. I expended most of the funds for this analysis for the summer salary of Mr. Baluta over the summer of 1991.

Because of the late data receipt and the educational supplement I requested and received a one year extension to the termination of this grant

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(at no additional cost).

In addition to the above analysis effort I also attended the most recent meetings of the U.S. ROSAT User's Committee including the November meeting in Boston on Nov. 5 in conjunction with the ROSAT Science Workshop. At the Workshop I presented a paper on analysis of 'Electronic Ghost Images in ROSAT Soft X-ray Images', an important instrumental effect on low energy point sources such as QQ Vul in ROSAT data.

Monies for ROSAT analysis on this grant have been completely expended. The additional money is supporting the ongoing work of Mr. Andrew Wilcox, who is writing a spaceship simulation program for the education of pre-college science students.